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| <u>Involved Instructions</u> | <u>Values</u> | <u>Dependence</u> | | | | <u>Load a, #1</u> |
|------------------------------|---------------|-------------------|----------|----------|------------------------|-------------------|
| | | <u>a</u> | <u>b</u> | <u>c</u> | <u>d (ext) (flags)</u> | |
| {1} | #1 | | | | | 1 |

| <u>Involved Instructions</u> | <u>Values</u> | <u>Initialized</u> | | | | <u>Load a, #1</u> |
|------------------------------|---------------|--------------------|----------|----------|------------------|-------------------|
| | | <u>a</u> | <u>b</u> | <u>c</u> | <u>d (flags)</u> | |
| | | | | | | 1 |

FIG. 1

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| | | <u>Dependence</u> | | | | |
|------------------------------|---------------|-------------------|---|--------|---|---------------|
| | | a | b | c | d | (ext) (flags) |
| <u>Involved Instructions</u> | <u>Values</u> | #1 | 1 | ↑ set | | |
| | | #2 | | ↑ zero | | |
| | | | | | | |

| | | <u>Initialized</u> | | | | |
|--|--|--------------------|---|---|---|---------|
| | | a | b | c | d | (flags) |
| | | 1 | 1 | | | |

FIG. 2

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| <u>Involved Instructions</u> | <u>Values</u> | <u>Dependence</u> | | | |
|------------------------------|---------------|-------------------|---------|---------|--|
| | | $\{w\}$ | $\{r\}$ | $\{f\}$ | (ext) ($flags$) |
| [1] [3] | #1 | 1 | a | b | c d |
| [2] [3] | #2 | 1 | 1 | 1 | combine [Set write = Op (Set read)] |

2 4

FIG. 3

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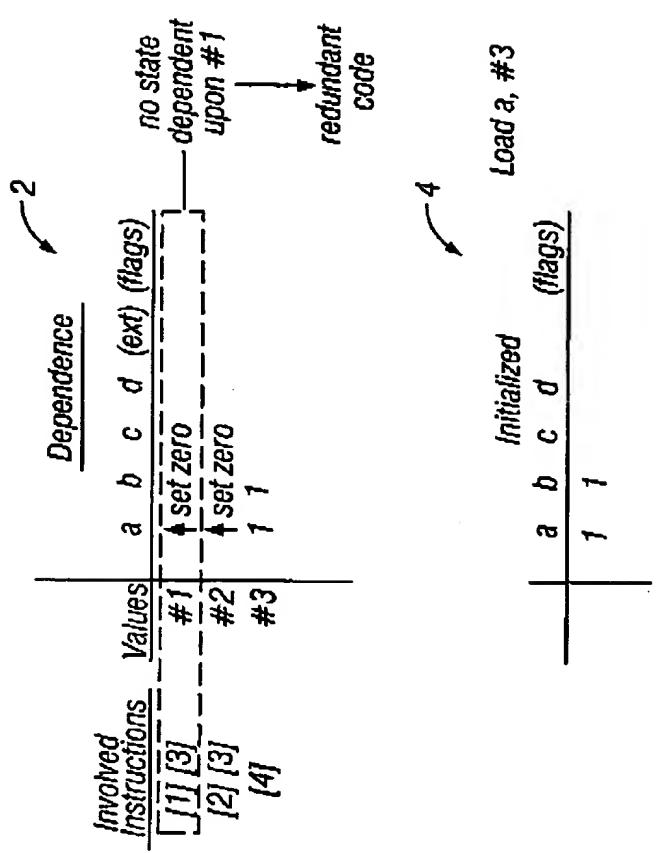


FIG. 4

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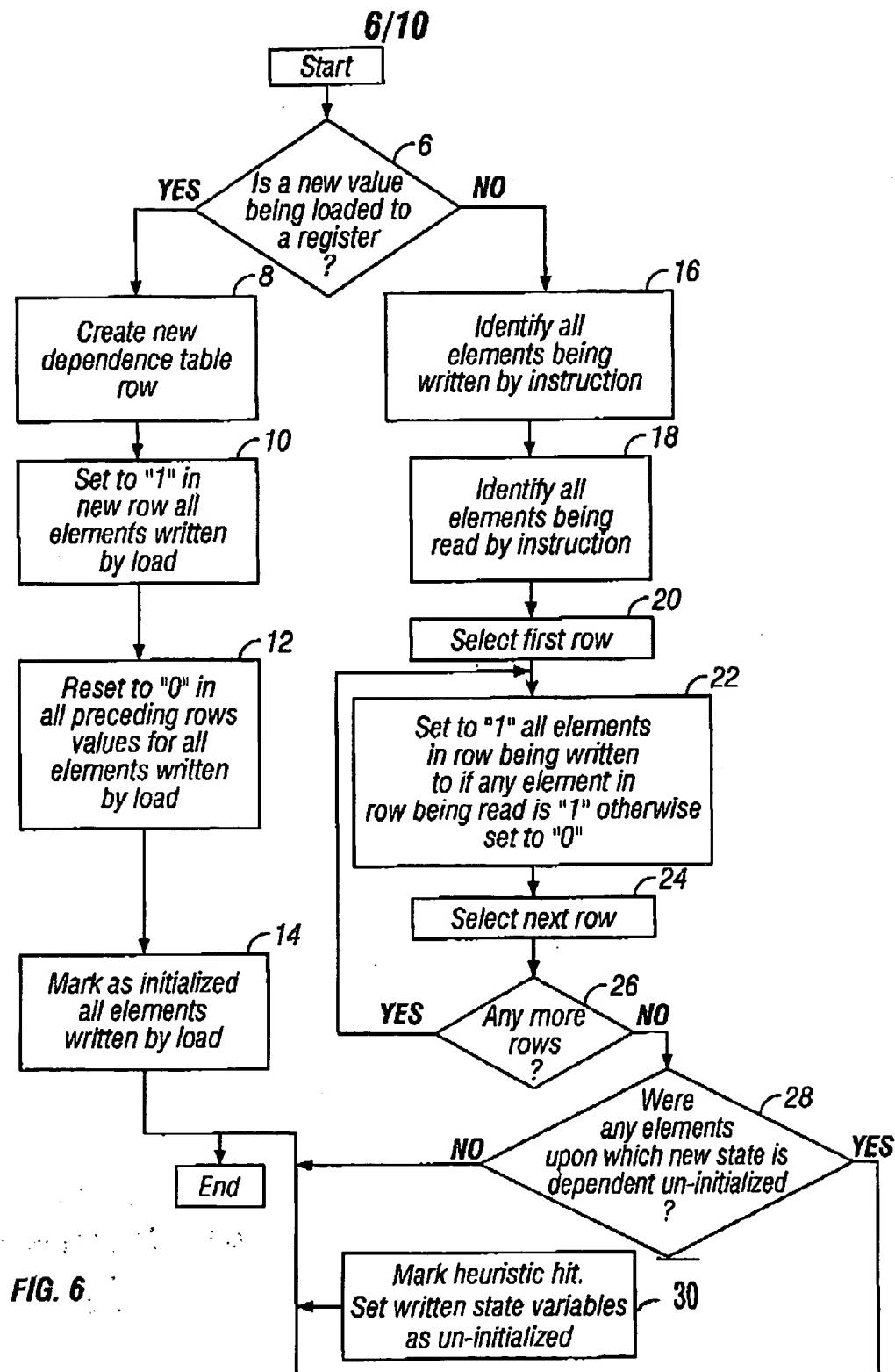
| <u>Involved Instructions</u> | <u>Values</u> | <u>Dependence</u> |
|------------------------------|---------------|--------------------------------------|
| | | <u>{w}</u> <u>{r}</u> <u>{f}</u> |
| | | a b c d (ext) (flags) |
| [1] [3] | #1 | |
| [2] [3] | #2 | 1 |
| [4] [5] | #3 | 1 → combine |

2 4

| <u>Initialized</u> | <u>a</u> | <u>b</u> | <u>c</u> | <u>d</u> | <u>(flags)</u> |
|--------------------|----------|----------|----------|----------|----------------|
| | 1 | | | | |

$a = a + c$

FIG. 5



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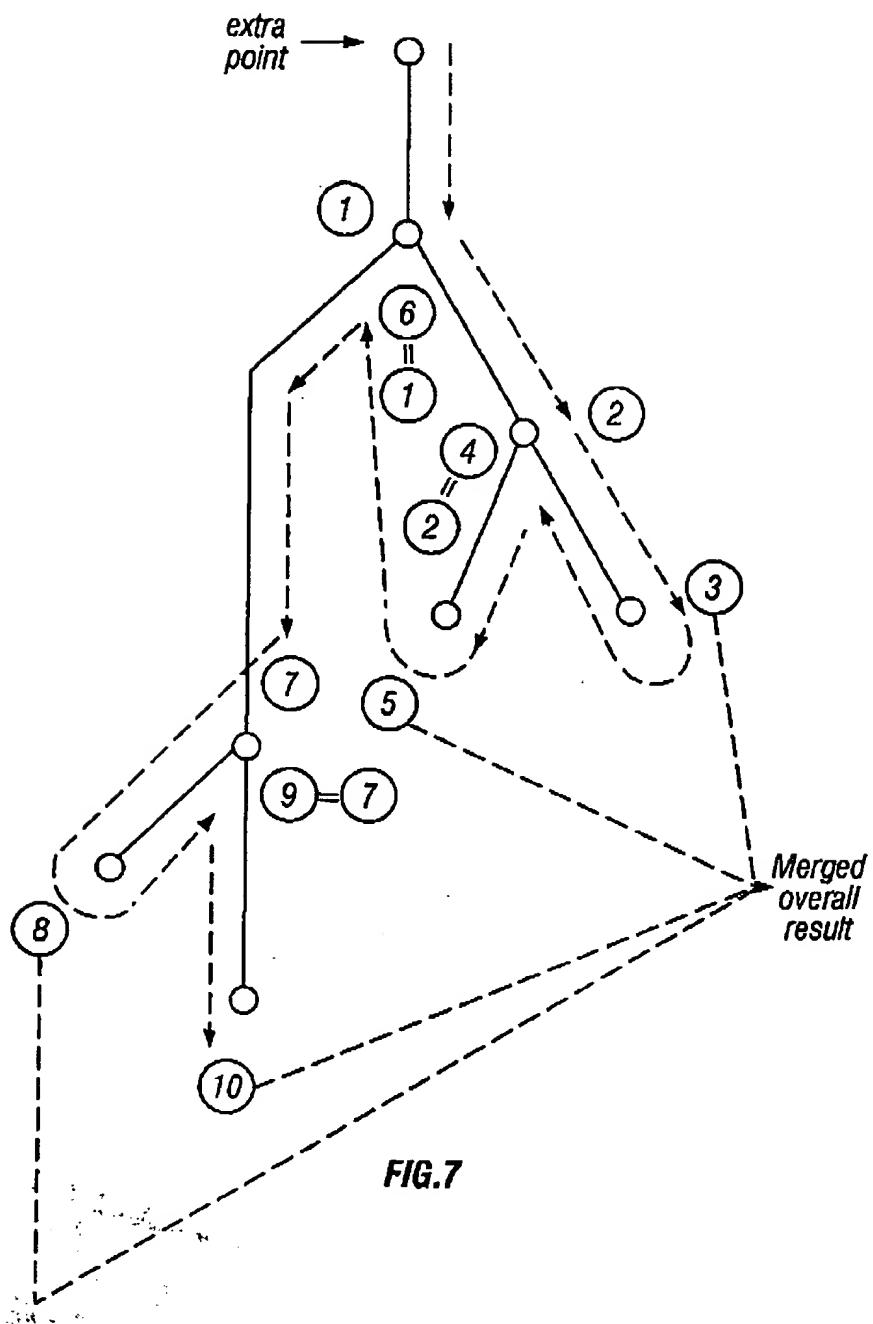


FIG.7

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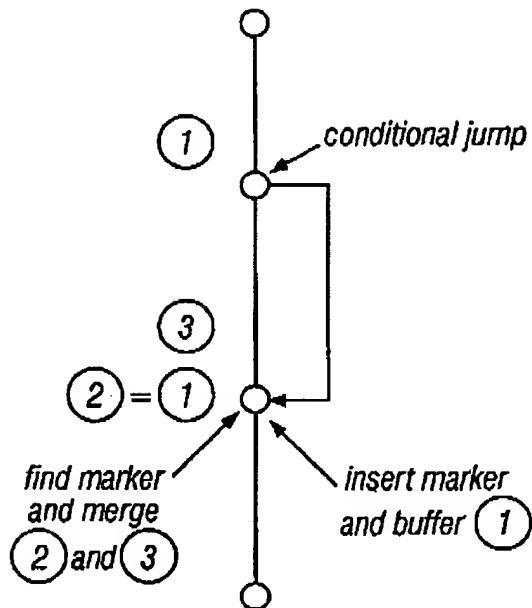


FIG. 8

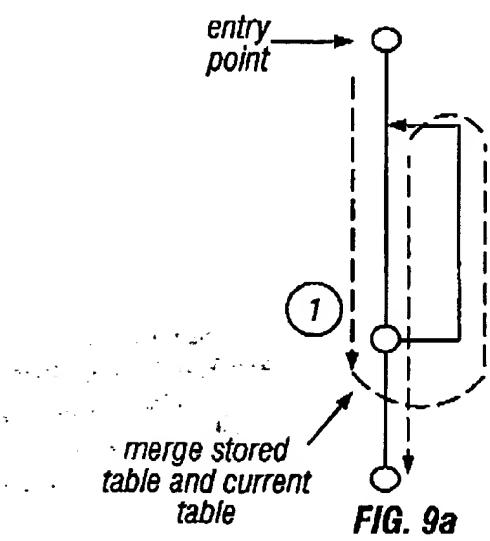


FIG. 9a

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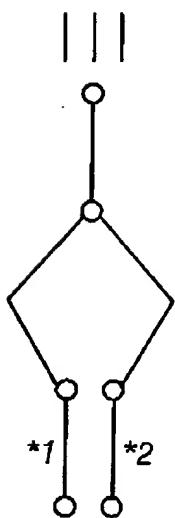
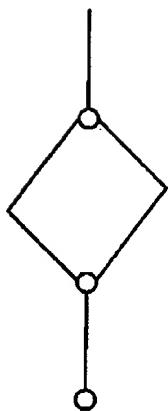
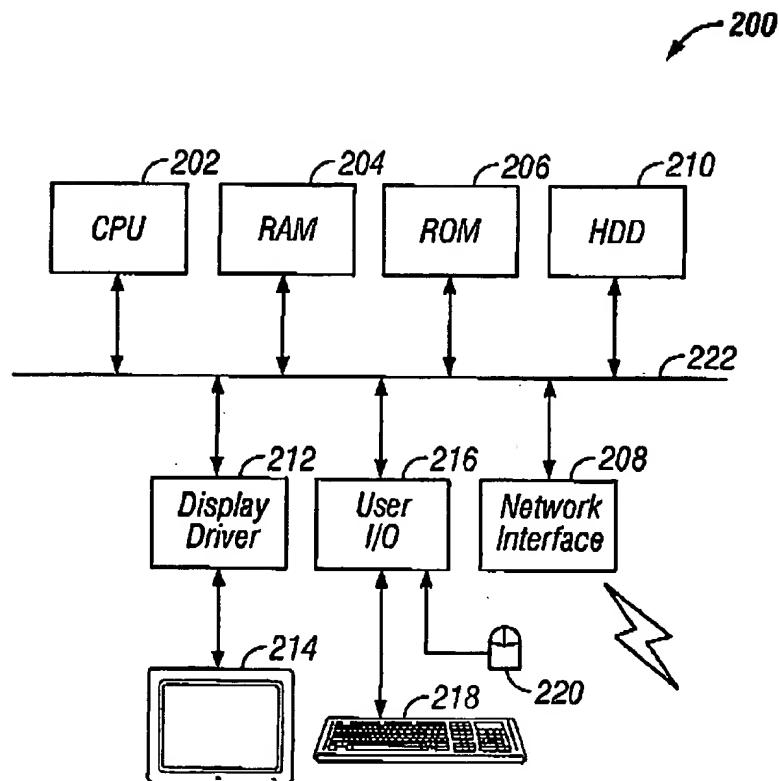


FIG.9b

10/10**FIG. 10**